

CASE STUDY

Highlighted Project

Multi-facet Installation Oxford, UNITED KINGDOM

OVERVIEW

Special focus: Different slopes

Installer: Engensa

Installation date: 17 Nov. 2010

Location: Oxford, UK

Average Irradiance:

1120 kWh/m²/year

Installed Capacity: 3.3kWp

Modules: 18 x 185W ET Solar

PowerBoxes: 18 x PB250-AOB

Inverters: 1 x SE3300



A 3.3 kWp installation consisting of one string with 18 modules that spreads across two roofs with two different slopes: 25° and 40°. The string is connected to a SolarEdge SE3300 inverter.

On November 17th 2010, Engensa, a leading British installer of PV systems, installed a 3.3 kWp PV installation on the roof of a property in Oxford, UK. The owner of the property, Mr. Bakewell, is already familiar with solar technology. As the owner of a swimming pool business and a supporter of green technology, he promotes the use of solar heating installations to keep the pool water warm. His beautiful old estate, bathed by the scent of the surrounding pine trees, serves as an exhibition space for his pools. To improve his carbon footprint even further Mr. Bakewell wanted to install a grid-connected PV system on his house.

"When I first consulted a PV professional about installing a grid-connected PV installation, I explained to them that I had two houses at about 10 meter distance from each other, both of which have a south facing roof facet. The professional recommended that I install two PV installations using two inverters, one for each roof" says Mr. Bakewell. The problem was that the roofs of the two houses have two different slopes: one has a 25° slope and the other has a 40° slope.

"They also said that my pine trees could pose a problem because they cast shades on my home in the mornings."

Traditional installation habits recommend avoiding shaded areas on the roof and stick to rather rigid design rules: strings connected to the same inverter need to be identical in length, orientation and slope, as do modules in a serial connection. Hence, in their efforts to avoid mismatch between modules, installers are limited in their freedom to design PV systems the way they would ideally like to.

The surprise came when Mr. Bakewell called Engensa for a second opinion. He found it was actually possible to install one PV system that would spread across the two roofs using a SolarEdge inverter and SolarEdge Power Optimisers. The installed system consists of one SolarEdge SE3300 inverter, 18 185W ET Solar modules, and 18 SolarEdge PB250-AOB Power Optimisers connected together in one string spanning the two different roofs. Power Optimisers are attached to each module separately and track their individual Maximum Power Point. The MPPT is optimal at all times regardless of the mismatch between the modules.

To sum up: installers who work with traditional inverter systems are limited in their ability to design tailor-made PV systems and have to use complicated, and often costly, installation strategies. Engensa has been working with SolarEdge for a while now and offers its technological advancements to break through existing boundaries. SolarEdge enables the installation of PV systems with optimal energy output regardless of the amount of partial shade. The SolarEdge Power Optimisers also maintain a fixed string voltage that extends the maximum string length. These advantages are of particular importance in the UK, where it is very common to install on a group of neighbouring row house rooftops.

"SolarEdge's product is the breakthrough that we have been waiting for. Providing our customers with the best innovations on the market whilst maintaining reliability and value are central to Engensa's company strategy. SolarEdge is the only product of its type that we trust, due to their unparalleled track record and longer warranty conditions."

Dr Toby Ferenczi
CTO Engensa